

Sequence Listing

10/524530

DT01 Rec'd PCT/PTC 11 FEB 2005

<110> LG Life Sciences, Ltd.

<120> Gene families associated with liver cancer

<130> PC03016-LG

<150> US 60/402,905

<151> 2002-08-14

<150> US 60/403,651

<151> 2002-08-16

<160> 10

<170> KopatentIn 1.71

<210> 1

<211> 578

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (155)..(418)

<223> Gene LBFL302, Clone BC4

<400> 1

cggacgcgtg gggtcgaacg ttccgactga gggttttctg cctgaagaag cgtcatacgg 60

accggattgt ttccgctggc ccagtgtccc cggagcttgt gtgcgataca gagagcacct 120

cggaagctga ggcagctggt acttgacaga gagg atg gcg ctg tcg acc 169

Met Ala Leu Ser Thr

1 5

ata gtc tcc cag agg aag cag ata aag cgg aag gct ccc cgt ggc ttt 217

Ile Val Ser Gln Arg Lys Gln Ile Lys Arg Lys Ala Pro Arg Gly Phe

10 15 20

Sequence Listing

cta aag cga gtc ttc aag cga aag aag cct caa ctt cgt ctg gag aaa 265
 Leu Lys Arg Val Phe Lys Arg Lys Lys Pro Gln Leu Arg Leu Glu Lys
 25 30 35

agt ggt gac tta ttg gtc cat ctg aac tgt tta ctg ttt gtt cat cga 313
 Ser Gly Asp Leu Leu Val His Leu Asn Cys Leu Leu Phe Val His Arg
 40 45 50

tta gca gaa gag tcc agg aca aac gct tgt gcg agt aaa tgt aga gtc 361
 Leu Ala Glu Glu Ser Arg Thr Asn Ala Cys Ala Ser Lys Cys Arg Val
 55 60 65

att aac aag gag cat gta ctg gcc gca gca aag gta att cta aag aag 409
 Ile Asn Lys Glu His Val Leu Ala Ala Ala Lys Val Ile Leu Lys Lys
 70 75 80 85

agc aga ggt ta gaagtcaaag aacatattct tgaaagttat gatgcattct 460
 Ser Arg Gly

tttggtgtgt aacagatcat aaagacattt ttacacatc agttaatatg ggattattaa 520

atattggcta taaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 578

<210> 2
 <211> 88
 <212> PRT
 <213> Homo sapiens

<400> 2
 Met Ala Leu Ser Thr Ile Val Ser Gln Arg Lys Gln Ile Lys Arg Lys
 1 5 10 15

Ala Pro Arg Gly Phe Leu Lys Arg Val Phe Lys Arg Lys Lys Pro Gln
 20 25 30

Leu Arg Leu Glu Lys Ser Gly Asp Leu Leu Val His Leu Asn Cys Leu
 35 40 45

Leu Phe Val His Arg Leu Ala Glu Glu Ser Arg Thr Asn Ala Cys Ala

Sequence Listing

50 55 60
 Ser Lys Cys Arg Val Ile Asn Lys Glu His Val Leu Ala Ala Ala Lys
 65 70 75 80

 Val Ile Leu Lys Lys Ser Arg Gly
 85

 <210> 3
 <211> 531
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (139)..(402)
 <223> Gene LBFL302, Clone BC7

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 tggcccagtg tccccggagc ttgtgtgcga tacagagagc acctcggaag ctgaggcagc 120

 tgggtacttga cagagagg atg gcg ctg tgc acc ata gtc tcc cag agg aag 171
 Met Ala Leu Ser Thr Ile Val Ser Gln Arg Lys
 1 5 10

 cag ata aag cgg aag gct ccc cgt ggc ttt cta aag cga gtc ttc aag 219
 Gln Ile Lys Arg Lys Ala Pro Arg Gly Phe Leu Lys Arg Val Phe Lys
 15 20 25

 cta aag aag cct caa ctt cgt ctg gag aaa agt ggt gac tta ttg gtc 267
 Leu Lys Lys Pro Gln Leu Arg Leu Glu Lys Ser Gly Asp Leu Leu Val
 30 35 40

 cat ctg aac tgt tta ctg ttt gtt cat cga tta gca gaa gag tcc agg 315
 His Leu Asn Cys Leu Leu Phe Val His Arg Leu Ala Glu Glu Ser Arg
 45 50 55

Sequence Listing

aca aac gct tgt gcg agt aaa tgt aga gtc att aac aag gag cat gta 363
 Thr Asn Ala Cys Ala Ser Lys Cys Arg Val Ile Asn Lys Glu His Val
 60 65 70 75
 ctg gcc gca gca aag gta att cta aag aag agc aga ggt tagaagtc 410
 Leu Ala Ala Ala Lys Val Ile Leu Lys Lys Ser Arg Gly
 80 85
 aaagaacata ttcttgaaag ttatgatgca ttcttttggg tggtaacaga tcataaagac 470
 attttttaca catcagttaa tatgggatta ttaaattattg gatataaaaa aaaaaaaaaa 530
 a 531
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 <211> 88
 <212> PRT
 <213> Homo sapiens
 <400> 4
 Met Ala Leu Ser Thr Ile Val Ser Gln Arg Lys Gln Ile Lys Arg Lys
 1 5 10 15
 Ala Pro Arg Gly Phe Leu Lys Arg Val Phe Lys Leu Lys Lys Pro Gln
 20 25 30
 Leu Arg Leu Glu Lys Ser Gly Asp Leu Leu Val His Leu Asn Cys Leu
 35 40 45
 Leu Phe Val His Arg Leu Ala Glu Glu Ser Arg Thr Asn Ala Cys Ala
 50 55 60
 Ser Lys Cys Arg Val Ile Asn Lys Glu His Val Leu Ala Ala Ala Lys
 65 70 75 80
 Val Ile Leu Lys Lys Ser Arg Gly
 85

Sequence Listing

<210> 5
 <211> 2067
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (32)..(1384)
 <223> Clone GE6

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 acc cgg cag cgg agg ctg gac agc tgt ggc aag cca ggg gag ctg ggg 94
 Thr Arg Gln Arg Arg Leu Asp Ser Cys Gly Lys Pro Gly Glu Leu Gly
 10 15 20
 ctt cct cac ccc ctc agc aca gga gga ctc cct gta gcc tca gaa gat 142
 Leu Pro His Pro Leu Ser Thr Gly Gly Leu Pro Val Ala Ser Glu Asp
 25 30 35
 gga gct ctc agg gcc cct gag agc caa agc gtg acc ccc aag cca ctg 190
 Gly Ala Leu Arg Ala Pro Glu Ser Gln Ser Val Thr Pro Lys Pro Leu
 40 45 50
 gag act gag cct agc agg gag acc gcc tgg tcc ata ggc ctt cag gtg 238
 Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser Ile Gly Leu Gln Val
 55 60 65
 acc gtg ccc ttc atg ttt gca ggc ctg gga ctg tcc tgg gcc ggc atg 286
 Thr Val Pro Phe Met Phe Ala Gly Leu Gly Leu Ser Trp Ala Gly Met
 70 75 80 85
 ctt ctg gac tat ttc cag gcc aac act gga caa att gat gac ccc cag 334
 Leu Leu Asp Tyr Phe Gln Ala Asn Thr Gly Gln Ile Asp Asp Pro Gln
 90 95 100

Sequence Listing

gag cag cac aga gtc atc agc agc aac ctg gcc ctc atc cag gtg cag	382
Glu Gln His Arg Val Ile Ser Ser Asn Leu Ala Leu Ile Gln Val Gln	
105 110 115	
gcc act gtc gtg ggg ctc ttg gct gct gtg gct gcg ctg ctg ttg ggc	430
Ala Thr Val Val Gly Leu Leu Ala Ala Val Ala Ala Leu Leu Leu Gly	
120 125 130	
gtg gtg tct cga gag gaa gtg gat gtc gcc aag gtg gag ttg ctg tgt	478
Val Val Ser Arg Glu Glu Val Asp Val Ala Lys Val Glu Leu Leu Cys	
135 140 145	
gcc agc agt gtc ctc act gcc ttc ctt gca gcc ttt gcc ctg ggg gtg	526
Ala Ser Ser Val Leu Thr Ala Phe Leu Ala Ala Phe Ala Leu Gly Val	
150 155 160 165	
ctg atg gtc tgt ata gtg att ggt gct cga aag ctc ggg gtc aac cca	574
Leu Met Val Cys Ile Val Ile Gly Ala Arg Lys Leu Gly Val Asn Pro	
170 175 180	
gac aac att gcc acg ccc att gca gcc agc ctg gga gac ctc atc aca	622
Asp Asn Ile Ala Thr Pro Ile Ala Ala Ser Leu Gly Asp Leu Ile Thr	
185 190 195	
ctg tcc att ctg gct ttg gtt agc agc ttc ttc tac aga cac aaa gat	670
Leu Ser Ile Leu Ala Leu Val Ser Ser Phe Phe Tyr Arg His Lys Asp	
200 205 210	
agt cgg tat ctg acg ccg ctg gtc tgc ctc agc ttt gcg gct ctg acc	718
Ser Arg Tyr Leu Thr Pro Leu Val Cys Leu Ser Phe Ala Ala Leu Thr	
215 220 225	
cca gtg tgg gtc ctc att gcc aag cag agc cca ccc atc gtg aag atc	766
Pro Val Trp Val Leu Ile Ala Lys Gln Ser Pro Pro Ile Val Lys Ile	
230 235 240 245	
ctg aag ttt ggc tgg ttc cca atc atc ctg gcc atg gtc atc agc agt	814
Leu Lys Phe Gly Trp Phe Pro Ile Ile Leu Ala Met Val Ile Ser Ser	
250 255 260	

Sequence Listing

ttc gga gga ctc atc ttg agc aaa acc gtt tct aaa cag cag tac aaa	862
Phe Gly Gly Leu Ile Leu Ser Lys Thr Val Ser Lys Gln Gln Tyr Lys	
265 270 275	
ggc atg gcg ata ttt acc ccc gtc ata tgt ggt gtt ggt ggc aat ctg	910
Gly Met Ala Ile Phe Thr Pro Val Ile Cys Gly Val Gly Gly Asn Leu	
280 285 290	
gtg gcc att cag acc agc cga atc tca acc tac ctg cac atg tgg agt	958
Val Ala Ile Gln Thr Ser Arg Ile Ser Thr Tyr Leu His Met Trp Ser	
295 300 305	
gca cct ggc gtc ctg ccc ctc cag atg aag aaa ttc tgg ccc aac ccg	1006
Ala Pro Gly Val Leu Pro Leu Gln Met Lys Lys Phe Trp Pro Asn Pro	
310 315 320 325	
tgt tct act ttc tgc acg tca gaa atc aat tcc atg tca gct cga gtc	1054
Cys Ser Thr Phe Cys Thr Ser Glu Ile Asn Ser Met Ser Ala Arg Val	
330 335 340	
ctg ctc ttg ctg gtg gtc cca ggc cat ctg att ttc ttc tac atc atc	1102
Leu Leu Leu Leu Val Val Pro Gly His Leu Ile Phe Phe Tyr Ile Ile	
345 350 355	
tac ctg gtg gag ggt cag tca gtc ata aac agc cag acc ttt gtg gtg	1150
Tyr Leu Val Glu Gly Gln Ser Val Ile Asn Ser Gln Thr Phe Val Val	
360 365 370	
ctc tac ctg ctg gca ggc ctg atc cag gtg aca atc ctg ctg tac ctg	1198
Leu Tyr Leu Leu Ala Gly Leu Ile Gln Val Thr Ile Leu Leu Tyr Leu	
375 380 385	
gca gaa gtg atg gtt cgg ctg act tgg cac cag gcc ctg gat cct gac	1246
Ala Glu Val Met Val Arg Leu Thr Trp His Gln Ala Leu Asp Pro Asp	
390 395 400 405	
aac cac tgc atc ccc tac ctt aca ggg ctg ggg gac ctg ctc ggt act	1294
Asn His Cys Ile Pro Tyr Leu Thr Gly Leu Gly Asp Leu Leu Gly Thr	
410 415 420	

Sequence Listing

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ggc ctc ctg gca ctc tgc ttt ttc act gac tgg cta ctg aag agc aag      1342
Gly Leu Leu Ala Leu Cys Phe Phe Thr Asp Trp Leu Leu Lys Ser Lys
      425              430              435

gca gag ctg ggt ggc atc tca gaa ctg gca tct gga cct ccc      taactg      1390
Ala Glu Leu Gly Gly Ile Ser Glu Leu Ala Ser Gly Pro Pro
      440              445              450

ggccccgctg gtcccatctg ctcatagaa tttcctctca catcagtggg atacagaatt      1450

cagtttctcc cttgccaggt ccttgggatg gttgaccctt gctctgcag tagccttttg      1510

tgagtctgct aaggtagctc tcacacacct cggctctggg gttgatacct gagcctgcaa      1570

tagagccctg aaatcaagag catggcttga gtgtgtgaat atgatgtgtg cacatgctta      1630

atgagcgtgc aagtgtgcac acgtttgtgg agaggagggt gttctggcct gagaaggtaa      1690

agaagaggca tgtccagtat gctttgcagg gtgtgtttgc tcttttccat gcccatgcaa      1750

cccagattgg ggtggagcag gaaggagctc ttttctgttc ccaagcctca gaactcttga      1810

gctgtggcct acttgctgtc ttcaccaggt tcaagctccg tgggccacac tgctgctgtg      1870

ccaagaaggt gtacagcctc cccaggatgg ggcctcatac aacccttcat ctgcactcaa      1930

catttaatcg tgccttgcgt gtctttttat tttccttttt gtttgcttagc aaaaacctct      1990

atttagattt caataatcag agaagtgtaa aataaaacag attatattgt aaaaaaaaaa      2050

aaaaaaaaaa aaaaaaa      2067

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<210> 6

<211> 451

<212> PRT

<213> Homo sapiens

<400> 6

Sequence Listing

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Met Asp Gly Thr Glu Thr Arg Gln Arg Arg Leu Asp Ser Cys Gly Lys
  1              5              10              15

Pro Gly Glu Leu Gly Leu Pro His Pro Leu Ser Thr Gly Gly Leu Pro
      20              25              30

Val Ala Ser Glu Asp Gly Ala Leu Arg Ala Pro Glu Ser Gln Ser Val
      35              40              45

Thr Pro Lys Pro Leu Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser
      50              55              60

Ile Gly Leu Gln Val Thr Val Pro Phe Met Phe Ala Gly Leu Gly Leu
      65              70              75              80

Ser Trp Ala Gly Met Leu Leu Asp Tyr Phe Gln Ala Asn Thr Gly Gln
      85              90              95

Ile Asp Asp Pro Gln Glu Gln His Arg Val Ile Ser Ser Asn Leu Ala
      100              105              110

Leu Ile Gln Val Gln Ala Thr Val Val Gly Leu Leu Ala Ala Val Ala
      115              120              125

Ala Leu Leu Leu Gly Val Val Ser Arg Glu Glu Val Asp Val Ala Lys
      130              135              140

Val Glu Leu Leu Cys Ala Ser Ser Val Leu Thr Ala Phe Leu Ala Ala
      145              150              155              160

Phe Ala Leu Gly Val Leu Met Val Cys Ile Val Ile Gly Ala Arg Lys
      165              170              175

Leu Gly Val Asn Pro Asp Asn Ile Ala Thr Pro Ile Ala Ala Ser Leu
      180              185              190

Gly Asp Leu Ile Thr Leu Ser Ile Leu Ala Leu Val Ser Ser Phe Phe
      195              200              205

Tyr Arg His Lys Asp Ser Arg Tyr Leu Thr Pro Leu Val Cys Leu Ser

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Sequence Listing

210	215	220
Phe Ala Ala Leu Thr Pro Val Trp Val Leu Ile Ala Lys Gln Ser Pro		
225	230	235 240
Pro Ile Val Lys Ile Leu Lys Phe Gly Trp Phe Pro Ile Ile Leu Ala		
245	250	255
Met Val Ile Ser Ser Phe Gly Gly Leu Ile Leu Ser Lys Thr Val Ser		
260	265	270
Lys Gln Gln Tyr Lys Gly Met Ala Ile Phe Thr Pro Val Ile Cys Gly		
275	280	285
Val Gly Gly Asn Leu Val Ala Ile Gln Thr Ser Arg Ile Ser Thr Tyr		
290	295	300
Leu His Met Trp Ser Ala Pro Gly Val Leu Pro Leu Gln Met Lys Lys		
305	310	315 320
Phe Trp Pro Asn Pro Cys Ser Thr Phe Cys Thr Ser Glu Ile Asn Ser		
325	330	335
Met Ser Ala Arg Val Leu Leu Leu Leu Val Val Pro Gly His Leu Ile		
340	345	350
Phe Phe Tyr Ile Ile Tyr Leu Val Glu Gly Gln Ser Val Ile Asn Ser		
355	360	365
Gln Thr Phe Val Val Leu Tyr Leu Leu Ala Gly Leu Ile Gln Val Thr		
370	375	380
Ile Leu Leu Tyr Leu Ala Glu Val Met Val Arg Leu Thr Trp His Gln		
385	390	395 400
Ala Leu Asp Pro Asp Asn His Cys Ile Pro Tyr Leu Thr Gly Leu Gly		
405	410	415
Asp Leu Leu Gly Thr Gly Leu Leu Ala Leu Cys Phe Phe Thr Asp Trp		
420	425	430

Sequence Listing

Leu Leu Lys Ser Lys Ala Glu Leu Gly Gly Ile Ser Glu Leu Ala Ser

435

440

445

Gly Pro Pro

450

<210> 7

<211> 2178

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (41)..(1501)

<223> Clone MB5

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Met Asp Gly Thr Glu

1

5

acc cgg cag cgg agg ctg gac agc tgt ggc aag cca ggg gag ctg ggg

103

Thr Arg Gln Arg Arg Leu Asp Ser Cys Gly Lys Pro Gly Glu Leu Gly

10

15

20

ctt cct cac ccc ctc agc aca gga gga ctc cct gta gcc tca gaa gat

151

Leu Pro His Pro Leu Ser Thr Gly Gly Leu Pro Val Ala Ser Glu Asp

25

30

35

gga gct ctc agg gcc cct gag agc caa agc gtg acc ccc aag cca ctg

199

Gly Ala Leu Arg Ala Pro Glu Ser Gln Ser Val Thr Pro Lys Pro Leu

40

45

50

gag act gag cct agc agg gag acc gcc tgg tcc ata ggc ctt cag gtg

247

Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser Ile Gly Leu Gln Val

55

60

65

Sequence Listing

<p>acc gtg ccc ttc atg ttt gca ggc ctg gga ctg tcc tgg gcc ggc atg Thr Val Pro Phe Met Phe Ala Gly Leu Gly Leu Ser Trp Ala Gly Met 70 75 80 85</p>	295
<p>ctt ctg gac tat ttc cag cac tgg cct gtg ttt gtg gag gtg aaa gac Leu Leu Asp Tyr Phe Gln His Trp Pro Val Phe Val Glu Val Lys Asp 90 95 100</p>	343
<p>ctt ttg aca ttg gtg ccg ccc ctg gtg ggc ctg aag ggg aac ctg gag Leu Leu Thr Leu Val Pro Pro Leu Val Gly Leu Lys Gly Asn Leu Glu 105 110 115</p>	391
<p>atg aca ctg gca tcc aga ctc tcc aca gct gcc aac act gga caa att Met Thr Leu Ala Ser Arg Leu Ser Thr Ala Ala Asn Thr Gly Gln Ile 120 125 130</p>	439
<p>gat gac ccc cag gag cag cac aga gtc atc agc agc aac ctg gcc ctc Asp Asp Pro Gln Glu Gln His Arg Val Ile Ser Ser Asn Leu Ala Leu 135 140 145</p>	487
<p>atc cag gtg cag gcc act gtc gtg ggg ctc ttg gct gct gtg gct gcg Ile Gln Val Gln Ala Thr Val Val Gly Leu Leu Ala Ala Val Ala Ala 150 155 160 165</p>	535
<p>ctg ctg ttg ggc gtg gtg tct cga gag gaa gtg gat gtc gcc aag gtg Leu Leu Leu Gly Val Val Ser Arg Glu Glu Val Asp Val Ala Lys Val 170 175 180</p>	583
<p>gag ttg ctg tgt gcc agc agt gtc ctc act gcc ttc ctt gca gcc ttt Glu Leu Leu Cys Ala Ser Ser Val Leu Thr Ala Phe Leu Ala Ala Phe 185 190 195</p>	631
<p>gcc ctg ggg gtg ctg atg gtc tgt ata gtg att ggt gct cga aag ctc Ala Leu Gly Val Leu Met Val Cys Ile Val Ile Gly Ala Arg Lys Leu 200 205 210</p>	679
<p>ggg gtc aac cca gac aac att gcc acg ccc att gca gcc agc ctg gga Gly Val Asn Pro Asp Asn Ile Ala Thr Pro Ile Ala Ala Ser Leu Gly 215 220 225</p>	727

gac ctc atc aca ctg tcc att ctg gct ttg gtt agc agc ttc ttc tac	775
Asp Leu Ile Thr Leu Ser Ile Leu Ala Leu Val Ser Ser Phe Phe Tyr	
230 235 240 245	
aga cac aaa gat agt cgg tat ctg acg ccg ctg gtc tgc ctc agc ttt	823
Arg His Lys Asp Ser Arg Tyr Leu Thr Pro Leu Val Cys Leu Ser Phe	
250 255 260	
gcg gct ctg acc cca gtg tgg gtc ctc att gcc aag cag agc cca ccc	871
Ala Ala Leu Thr Pro Val Trp Val Leu Ile Ala Lys Gln Ser Pro Pro	
265 270 275	
atc gtg aag atc ctg aag ttt ggc tgg ttc cca atc atc ctg gcc atg	919
Ile Val Lys Ile Leu Lys Phe Gly Trp Phe Pro Ile Ile Leu Ala Met	
280 285 290	
gtc atc agc agt ttc gga gga ctc atc ttg agc aaa acc gtt tct aaa	967
Val Ile Ser Ser Phe Gly Gly Leu Ile Leu Ser Lys Thr Val Ser Lys	
295 300 305	
cag cag tac aaa ggc atg gcg ata ttt acc ccc gtc ata tgt ggt gtt	1015
Gln Gln Tyr Lys Gly Met Ala Ile Phe Thr Pro Val Ile Cys Gly Val	
310 315 320 325	
ggt ggc aat ctg gtg gcc att cag acc agc cga atc tca acc tac ctg	1063
Gly Gly Asn Leu Val Ala Ile Gln Thr Ser Arg Ile Ser Thr Tyr Leu	
330 335 340	
cac atg tgg agt gca cct ggc gtc ctg ccc ctc cag atg aag aaa ttc	1111
His Met Trp Ser Ala Pro Gly Val Leu Pro Leu Gln Met Lys Lys Phe	
345 350 355	
tgg ccc aac ccg tgt tct act ttc tgc acg tca gaa atc aat tcc atg	1159
Trp Pro Asn Pro Cys Ser Thr Phe Cys Thr Ser Glu Ile Asn Ser Met	
360 365 370	
tca gct cga gtc ctg ctc ttg ctg gtg gtc cca ggc cat ctg att ttc	1207
Ser Ala Arg Val Leu Leu Leu Leu Val Val Pro Gly His Leu Ile Phe	
375 380 385	

Sequence Listing

ttc tac atc atc tac ctg gtg gag ggt cag tca gtc ata aac agc cag Phe Tyr Ile Ile Tyr Leu Val Glu Gly Gln Ser Val Ile Asn Ser Gln 390 395 400 405	1255
acc ttt gtg gtg ctc tac ctg ctg gca ggc ctg atc cag gtg aca atc Thr Phe Val Val Leu Tyr Leu Leu Ala Gly Leu Ile Gln Val Thr Ile 410 415 420	1303
ctg ctg tac ctg gca gaa gtg atg gtt cgg ctg act tgg cac cag gcc Leu Leu Tyr Leu Ala Glu Val Met Val Arg Leu Thr Trp His Gln Ala 425 430 435	1351
ctg gat cct gac aac cac tgc atc ccc tac ctt aca ggg ctg ggg gac Leu Asp Pro Asp Asn His Cys Ile Pro Tyr Leu Thr Gly Leu Gly Asp 440 445 450	1399
ctg ctc ggt act ggc ctc ctg gca ctc tgc ttt ttc act gac tgg cta Leu Leu Gly Thr Gly Leu Leu Ala Leu Cys Phe Phe Thr Asp Trp Leu 455 460 465	1447
ctg aag agc aag gca gag ctg ggt ggc atc tca gaa ctg gca tct gga Leu Lys Ser Lys Ala Glu Leu Gly Gly Ile Ser Glu Leu Ala Ser Gly 470 475 480 485	1495
cct ccc taactgggc cccgctggtc ccatttgctc attagaattt cctctcacat Pro Pro	1550
cagtgggata cagaattcag tttctccctt gccaggtcct tgggatgggt gaccctgcc	1610
tctgcagtag ccttttgtga gtctgctaag gtagctctca cacacctcgg ctctgggggt	1670
gatacctgag cctgcaatag agccctgaaa tcaagagcat ggcttgagtg tgtgaatatg	1730
atgtgtgcac atgcttaatg agcgtgcaag tgtgcacacg tttgtggaga ggaggggtgt	1790
ctggcctgag aaggtaaaga agaggcatgt ccagtatgct ttgcagggtg tgtttgctct	1850
tttccatgcc catgcaaccc agattggggt ggagcaggaa ggagctcttt tctgttccca	1910
agcctcagaa ctcttgagct gtggcttact tgctgtcttc accaggttca agctccgtgg	1970

Sequence Listing

gccacactgc tgctgtgccca agaaggtgta cagcctcccc aggatggggc ctcatacaac 2030
 ccttcatctg cactcaacat ttaatcgtgt ccttgctgtc tttttatttt cctttttgtt 2090
 tgtagcaaaa aacctctatt tagatttcaa taatcagaga agtgtaaaat aaaacagatt 2150
 atattgtact tgaaaaaaaa aaaaaaaaa 2178

<210> 8

<211> 487

<212> PRT

<213> Homo sapiens

<400> 8

Met Asp Gly Thr Glu Thr Arg Gln Arg Arg Leu Asp Ser Cys Gly Lys
 1 5 10 15

Pro Gly Glu Leu Gly Leu Pro His Pro Leu Ser Thr Gly Gly Leu Pro
 20 25 30

Val Ala Ser Glu Asp Gly Ala Leu Arg Ala Pro Glu Ser Gln Ser Val
 35 40 45

Thr Pro Lys Pro Leu Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser
 50 55 60

Ile Gly Leu Gln Val Thr Val Pro Phe Met Phe Ala Gly Leu Gly Leu
 65 70 75 80

Ser Trp Ala Gly Met Leu Leu Asp Tyr Phe Gln His Trp Pro Val Phe
 85 90 95

Val Glu Val Lys Asp Leu Leu Thr Leu Val Pro Pro Leu Val Gly Leu
 100 105 110

Lys Gly Asn Leu Glu Met Thr Leu Ala Ser Arg Leu Ser Thr Ala Ala
 115 120 125

Sequence Listing

Asn Thr Gly Gln Ile Asp Asp Pro Gln Glu Gln His Arg Val Ile Ser
 130 135 140

Ser Asn Leu Ala Leu Ile Gln Val Gln Ala Thr Val Val Gly Leu Leu
 145 150 155 160

Ala Ala Val Ala Ala Leu Leu Leu Gly Val Val Ser Arg Glu Glu Val
 165 170 175

Asp Val Ala Lys Val Glu Leu Leu Cys Ala Ser Ser Val Leu Thr Ala
 180 185 190

Phe Leu Ala Ala Phe Ala Leu Gly Val Leu Met Val Cys Ile Val Ile
 195 200 205

Gly Ala Arg Lys Leu Gly Val Asn Pro Asp Asn Ile Ala Thr Pro Ile
 210 215 220

Ala Ala Ser Leu Gly Asp Leu Ile Thr Leu Ser Ile Leu Ala Leu Val
 225 230 235 240

Ser Ser Phe Phe Tyr Arg His Lys Asp Ser Arg Tyr Leu Thr Pro Leu
 245 250 255

Val Cys Leu Ser Phe Ala Ala Leu Thr Pro Val Trp Val Leu Ile Ala
 260 265 270

Lys Gln Ser Pro Pro Ile Val Lys Ile Leu Lys Phe Gly Trp Phe Pro
 275 280 285

Ile Ile Leu Ala Met Val Ile Ser Ser Phe Gly Gly Leu Ile Leu Ser
 290 295 300

Lys Thr Val Ser Lys Gln Gln Tyr Lys Gly Met Ala Ile Phe Thr Pro
 305 310 315 320

Val Ile Cys Gly Val Gly Gly Asn Leu Val Ala Ile Gln Thr Ser Arg
 325 330 335

Ile Ser Thr Tyr Leu His Met Trp Ser Ala Pro Gly Val Leu Pro Leu

Sequence Listing

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          340          345          350
Gln Met Lys Lys Phe Trp Pro Asn Pro Cys Ser Thr Phe Cys Thr Ser
      355          360          365

Glu Ile Asn Ser Met Ser Ala Arg Val Leu Leu Leu Leu Val Val Pro
      370          375          380

Gly His Leu Ile Phe Phe Tyr Ile Ile Tyr Leu Val Glu Gly Gln Ser
      385          390          395          400

Val Ile Asn Ser Gln Thr Phe Val Val Leu Tyr Leu Leu Ala Gly Leu
          405          410          415

Ile Gln Val Thr Ile Leu Leu Tyr Leu Ala Glu Val Met Val Arg Leu
          420          425          430

Thr Trp His Gln Ala Leu Asp Pro Asp Asn His Cys Ile Pro Tyr Leu
          435          440          445

Thr Gly Leu Gly Asp Leu Leu Gly Thr Gly Leu Leu Ala Leu Cys Phe
          450          455          460

Phe Thr Asp Trp Leu Leu Lys Ser Lys Ala Glu Leu Gly Gly Ile Ser
          465          470          475          480

Glu Leu Ala Ser Gly Pro Pro
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<222>      (31)..(1551)
<223>      Clone IE4

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Sequence Listing

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 Met Asp Gly Thr Glu Thr Arg Gln
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cgg agg ctg gac agc tgt ggc aag cca ggg gag ctg ggg ctt cct cac 102
 Arg Arg Leu Asp Ser Cys Gly Lys Pro Gly Glu Leu Gly Leu Pro His
 10 15 20

ccc ctc agc aca gga gga ctc cct gta gcc tca gaa gat gga gct ctc 150
 Pro Leu Ser Thr Gly Gly Leu Pro Val Ala Ser Glu Asp Gly Ala Leu
 25 30 35 40

agg gcc cct gag agc caa agc gtg acc ccc aag cca ctg gag act gag 198
 Arg Ala Pro Glu Ser Gln Ser Val Thr Pro Lys Pro Leu Glu Thr Glu
 45 50 55

cct agc agg gag acc gcc tgg tcc ata ggc ctt cag gtg acc gtg ccc 246
 Pro Ser Arg Glu Thr Ala Trp Ser Ile Gly Leu Gln Val Thr Val Pro
 60 65 70

ttc atg ttt gca ggc ctg gga ctg tcc tgg gcc ggc atg ctt ctg gac 294
 Phe Met Phe Ala Gly Leu Gly Leu Ser Trp Ala Gly Met Leu Leu Asp
 75 80 85

tat ttc cag cac tgg cct gtg ttt gtg gag gtg aaa gac ctt ttg aca 342
 Tyr Phe Gln His Trp Pro Val Phe Val Glu Val Lys Asp Leu Leu Thr
 90 95 100

ttg gtg ccg ccc ctg gtg ggc ctg aag ggg aac ctg gag atg aca ctg 390
 Leu Val Pro Pro Leu Val Gly Leu Lys Gly Asn Leu Glu Met Thr Leu
 105 110 115 120

gca tcc aga ctc tcc aca gct gcc aac act gga caa att gat gac ccc 438
 Ala Ser Arg Leu Ser Thr Ala Ala Asn Thr Gly Gln Ile Asp Asp Pro
 125 130 135

cag gag cag cac aga gtc atc agc agc aac ctg gcc ctc atc cag gtg 486
 Gln Glu Gln His Arg Val Ile Ser Ser Asn Leu Ala Leu Ile Gln Val

Sequence Listing

140	145	150	
cag gcc act gtc gtg ggg ctc ttg gct gct gtg gct gcg ctg ctg ttg			534
Gln Ala Thr Val Val Gly Leu Leu Ala Ala Val Ala Ala Leu Leu Leu			
155	160	165	
ggc gtg gtg tct cga gag gaa gtg gat gtc gcc aag gtg gag ttg ctg			582
Gly Val Val Ser Arg Glu Glu Val Asp Val Ala Lys Val Glu Leu Leu			
170	175	180	
tgt gcc agc agt gtc ctc act gcc ttc ctt gca gcc ttt gcc ctg ggg			630
Cys Ala Ser Ser Val Leu Thr Ala Phe Leu Ala Ala Phe Ala Leu Gly			
185	190	195	200
gtg ctg atg gtc tgt ata gtg att ggt gct cga aag ctc ggg gtc aac			678
Val Leu Met Val Cys Ile Val Ile Gly Ala Arg Lys Leu Gly Val Asn			
205	210	215	
cca gac aac att gcc acg ccc att gca gcc agc ctg gga gac ctc atc			726
Pro Asp Asn Ile Ala Thr Pro Ile Ala Ala Ser Leu Gly Asp Leu Ile			
220	225	230	
aca ctg tcc att ctg gct ttg gtt agc agc ttc ttc tac aga cac aaa			774
Thr Leu Ser Ile Leu Ala Leu Val Ser Ser Phe Phe Tyr Arg His Lys			
235	240	245	
gat agt cgg tat ctg acg ccg ctg gtc tgc ctc agc ttt gcg gct ctg			822
Asp Ser Arg Tyr Leu Thr Pro Leu Val Cys Leu Ser Phe Ala Ala Leu			
250	255	260	
acc cca gtg tgg gtc ctc att gcc aag cag agc cca ccc atc gtg aag			870
Thr Pro Val Trp Val Leu Ile Ala Lys Gln Ser Pro Pro Ile Val Lys			
265	270	275	280
atc ctg aag ttt ggc tgg ttc cca atc atc ctg gcc atg gtc atc agc			918
Ile Leu Lys Phe Gly Trp Phe Pro Ile Ile Leu Ala Met Val Ile Ser			
285	290	295	
agt ttc gga gga ctc atc ttg agc aaa acc gtt tct aaa cag cag tac			966
Ser Phe Gly Gly Leu Ile Leu Ser Lys Thr Val Ser Lys Gln Gln Tyr			

Sequence Listing

300	305	310	
aaa ggc atg gcg ata ttt acc ccc gtc ata tgt ggt gtt ggt ggc aat			1014
Lys Gly Met Ala Ile Phe Thr Pro Val Ile Cys Gly Val Gly Gly Asn			
315	320	325	
ctg gtg gcc att cag acc agc cga atc tca acc tac ctg cac atg tgg			1062
Leu Val Ala Ile Gln Thr Ser Arg Ile Ser Thr Tyr Leu His Met Trp			
330	335	340	
agt gca cct ggc gtc ctg ccc ctc cag atg aag aaa ttc tgg ccc aac			1110
Ser Ala Pro Gly Val Leu Pro Leu Gln Met Lys Lys Phe Trp Pro Asn			
345	350	355	360
ccg tgt tct act ttc tgc acg tca gaa atc aat tcc atg tca gct cga			1158
Pro Cys Ser Thr Phe Cys Thr Ser Glu Ile Asn Ser Met Ser Ala Arg			
365	370	375	
gtc ctg ctc ttg ctg gtg gtc cca ggc cat ctg att ttc ttc tac atc			1206
Val Leu Leu Leu Leu Val Val Pro Gly His Leu Ile Phe Phe Tyr Ile			
380	385	390	
atc tac ctg gtg gag ggt cag tca gtc ata aac agc cag acc ttt gtg			1254
Ile Tyr Leu Val Glu Gly Gln Ser Val Ile Asn Ser Gln Thr Phe Val			
395	400	405	
gtg ctc tac ctg ctg gca ggc ctg atc cag gtg aca atc ctg ctg tac			1302
Val Leu Tyr Leu Leu Ala Gly Leu Ile Gln Val Thr Ile Leu Leu Tyr			
410	415	420	
ctg gca gaa gtg atg gtt cgg ctg act tgg cac cag gcc ctg gat cct			1350
Leu Ala Glu Val Met Val Arg Leu Thr Trp His Gln Ala Leu Asp Pro			
425	430	435	440
gac aac cac tgc atc ccc tac ctt aca ggg ctg ggg gac ctg ctc ggt			1398
Asp Asn His Cys Ile Pro Tyr Leu Thr Gly Leu Gly Asp Leu Leu Gly			
445	450	455	
tca agc tcc gtg ggc cac act gct gct gtg cca aga agg tgt aca gcc			1446
Ser Ser Ser Val Gly His Thr Ala Ala Val Pro Arg Arg Cys Thr Ala			

Sequence Listing

460	465	470	
tcc cca gga tgg ggc ctc ata caa ccc ttc atc tgc act caa cat tta			1494
Ser Pro Gly Trp Gly Leu Ile Gln Pro Phe Ile Cys Thr Gln His Leu			
475	480	485	
atc gtg tcc ttg ctg tct ttt tat ttt cct ttt tgt ttg tta gca aaa			1542
Ile Val Ser Leu Leu Ser Phe Tyr Phe Pro Phe Cys Leu Leu Ala Lys			
490	495	500	
acc tct att tagatttca ataatacagag aagtgtaaaa taaaacagat tatattgtaa			1600
Thr Ser Ile			
505			
aaaaaaaaa aaaaaa			1616
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1	5	10	15
Pro Gly Glu Leu Gly Leu Pro His Pro Leu Ser Thr Gly Gly Leu Pro			
20	25	30	
Val Ala Ser Glu Asp Gly Ala Leu Arg Ala Pro Glu Ser Gln Ser Val			
35	40	45	
Thr Pro Lys Pro Leu Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser			
50	55	60	
Ile Gly Leu Gln Val Thr Val Pro Phe Met Phe Ala Gly Leu Gly Leu			
65	70	75	80
Ser Trp Ala Gly Met Leu Leu Asp Tyr Phe Gln His Trp Pro Val Phe			
85	90	95	

Sequence Listing

Val Glu Val Lys Asp Leu Leu Thr Leu Val Pro Pro Leu Val Gly Leu
 100 105 110

Lys Gly Asn Leu Glu Met Thr Leu Ala Ser Arg Leu Ser Thr Ala Ala
 115 120 125

Asn Thr Gly Gln Ile Asp Asp Pro Gln Glu Gln His Arg Val Ile Ser
 130 135 140

Ser Asn Leu Ala Leu Ile Gln Val Gln Ala Thr Val Val Gly Leu Leu
 145 150 155 160

Ala Ala Val Ala Ala Leu Leu Leu Gly Val Val Ser Arg Glu Glu Val
 165 170 175

Asp Val Ala Lys Val Glu Leu Leu Cys Ala Ser Ser Val Leu Thr Ala
 180 185 190

Phe Leu Ala Ala Phe Ala Leu Gly Val Leu Met Val Cys Ile Val Ile
 195 200 205

Gly Ala Arg Lys Leu Gly Val Asn Pro Asp Asn Ile Ala Thr Pro Ile
 210 215 220

Ala Ala Ser Leu Gly Asp Leu Ile Thr Leu Ser Ile Leu Ala Leu Val
 225 230 235 240

Ser Ser Phe Phe Tyr Arg His Lys Asp Ser Arg Tyr Leu Thr Pro Leu
 245 250 255

Val Cys Leu Ser Phe Ala Ala Leu Thr Pro Val Trp Val Leu Ile Ala
 260 265 270

Lys Gln Ser Pro Pro Ile Val Lys Ile Leu Lys Phe Gly Trp Phe Pro
 275 280 285

Ile Ile Leu Ala Met Val Ile Ser Ser Phe Gly Gly Leu Ile Leu Ser
 290 295 300

Sequence Listing

Lys Thr Val Ser Lys Gln Gln Tyr Lys Gly Met Ala Ile Phe Thr Pro
 305 310 315 320

Val Ile Cys Gly Val Gly Gly Asn Leu Val Ala Ile Gln Thr Ser Arg
 325 330 335

Ile Ser Thr Tyr Leu His Met Trp Ser Ala Pro Gly Val Leu Pro Leu
 340 345 350

Gln Met Lys Lys Phe Trp Pro Asn Pro Cys Ser Thr Phe Cys Thr Ser
 355 360 365

Glu Ile Asn Ser Met Ser Ala Arg Val Leu Leu Leu Leu Val Val Pro
 370 375 380

Gly His Leu Ile Phe Phe Tyr Ile Ile Tyr Leu Val Glu Gly Gln Ser
 385 390 395 400

Val Ile Asn Ser Gln Thr Phe Val Val Leu Tyr Leu Leu Ala Gly Leu
 405 410 415

Ile Gln Val Thr Ile Leu Leu Tyr Leu Ala Glu Val Met Val Arg Leu
 420 425 430

Thr Trp His Gln Ala Leu Asp Pro Asp Asn His Cys Ile Pro Tyr Leu
 435 440 445

Thr Gly Leu Gly Asp Leu Leu Gly Ser Ser Ser Val Gly His Thr Ala
 450 455 460

Ala Val Pro Arg Arg Cys Thr Ala Ser Pro Gly Trp Gly Leu Ile Gln
 465 470 475 480

Pro Phe Ile Cys Thr Gln His Leu Ile Val Ser Leu Leu Ser Phe Tyr
 485 490 495

Phe Pro Phe Cys Leu Leu Ala Lys Thr Ser Ile
 500 505